Kazuko KONNO*: Studies on Japanese lower aquatic Phycomycetes (3) *Rhizidium tomiyamanum* a new marine chytrid

今野和子*: 日本産下等水棲藻菌類の研究 (3) 海産の一新種 *Rhizidium tomiyamanum*

I obtained a culture of posteriory uniflagellate marine chytrid isolated from *Porphyra* sp. by Mr. Tomiyama. Thalli of this chytrid consist of well developed rhizoidal system and a zoosporangium which has one to four exit pores. After observations, I determined it a new species which belongs to the genus *Rhizidium*. I will name it *Rhizidium tomiyamanum* after Mr. Tomiyama. I wish to express my thanks to him who gave me his strain willingly. Type specimen is preserved in Herb. TNS.

Rhizidium tomiyamanum Konno sp. nov.

Zoosporangia sphaerica, subsphaerica, ovoidea vel obovata, 15–54 μ (32.7 μ) longa, 12–51.5 μ (31.4 μ) crassa, poros exitos 1–4 apicaliter, subapicaliter vel basilare praedita; pariete hyalino levi, tenue et persistenti. Rhizoideum axillale breve plerumque extramatricale ca. 5–12 μ crassum, simplex apophysatum 12–25 × 7–10 μ, obovatum vel clavatum, vel semel∼ter ramosum. Rhizoidea terminalia tenuissima subtiliter ramosa usque ad 80 μ longis attingentia. Zoosporae sphaericae 3.5–5 μ in diam., globulo refringenti et flagello posteriole 30–40 μ longo praeditae. Sporae perdurantes ignotae.

Weakly parasitic (?) on *Porphyra* sp. and saprophytic on pine pollen and maintained on previously reported agar medium[4] and Fuller's medium.[1]

The developmental process from zoospores to mature thalli of this fungus is similar to other members of chytrid. After 2–5 hours in swimming, zoospores encyst and germinate (Fig. A), then extend their rhizoidal system (Figs. B, C). After the rhizoidal system well developed, encysted zoospores begin to enlarge and turn to zoosporangia themselves (Fig. D). About 2–3 days after encystment, thalli mature and begin to discharge from deliquescent papillae (Fig. F). Zoospores differentiate already in zoosporangium but do not move before discharge. Emerging zoospores swim away instantly

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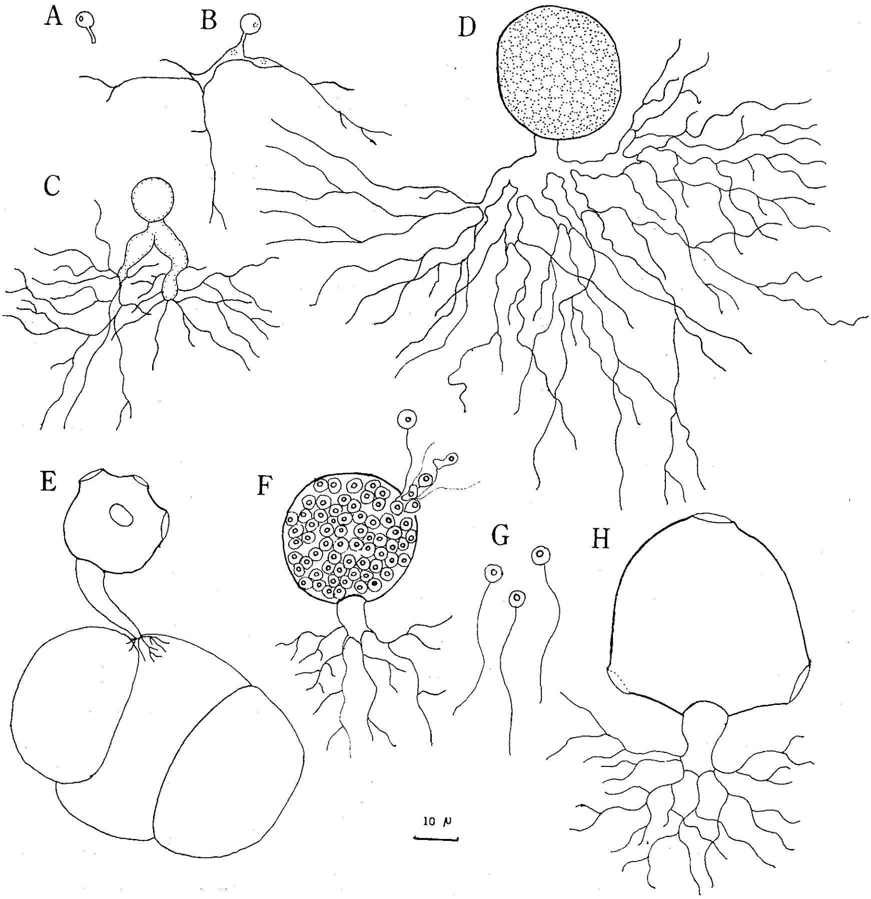

Fig. A–H. *Rhizidium tomiyamanum*. A–D. Development process on agar medium. A. Germination of encysted zoospore. D. Mature thallus. E. Empty zoosporangium on pine pollen. F. Discharging thallus on agar medium. G. Zoospores. H. Empty zoosporangium on agar medium.

without remain at the orifice.

The feature of rhizoidal system in this fungus varies by salinity of medium. When medium was made with concentrated sea water, main rhizoidal axis is simple as apophysis (Figs. F, H), and branch of rhizoids are very sparse, short and almost simple. But, in case of diluted sea water growth and ramification occur luxuriant both main axis and branches (Fig. D).

In the genus *Rhizidium*, *R. braziliense* Karling and *R. laeve* Karling[3] are known to have more than one discharge pores on sporangia. The important differences between these fungi and *R. tomiyamanum* are zoospore shape and method of zoospore emergence. In Japanese species, zoospores are spherical, emerge individually in fully formed state, without forming vesicle, and disperse instantly; but in others, zoospores are oval to elongate, emerge in globular mass, in which they remain several minutes. Furthermore *R. tomiyamanum* has more complicated rhizoidal system than other two species.

References

1) Fuller, M.S., B.E. Fowles & D.J. McLaughlin (1964): Isolation and pure culture study of marine Phycomycetes. Mycologia, **56**: 745–756. 2) Johnson, T.W. Jr. & F.K. Sparrow Jr. (1961): Fungi in oceans and estuaries. 3) Karling, J.S. (1944): Brazilian chytrids. II. New species of *Rhizidium*. Amer. Jour. Bot. **31**: 254–261. 4) Konno, K. (1969): Studies on Japanese lower aquatic Phycomycetes (2). Trans. Mycol. Soc. Japan, **10**: 9–13. 5) Sparrow, F.K. Jr. (1960): Aquatic Phycomycetes. 2nd. rev. ed.

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東京湾産のノリの葉体から，東京大学の富山保氏によって chytrid (藻菌類) が分離された。氏の厚意により分離株を研究する機会が与えられた。新種であったのでここに発表する。*Rhizidium tomiyamanum* は遊走子のう球形，卵形或は倒卵形 15–54 μ ×12–51.5 μ，無蓋の遊走子放出孔を 1–4 個有する。rhizoidal system は太い主軸 (径 5–12 μ) と細く分岐した枝からなり，寒天培地上では，約 80 μ の長さになる。遊走子は球形で直径 3.5–5 μ，内部に 1 個の大きな油滴をもつ。後部に 30–40 μ のべん毛を 1 本有する。体眠胞子は不明。

Rhizidium 属では，*R. braziliense* Karling，*R. laeve* Karling の 2 種が，本菌と形態的に類似点をもつが，両種とも淡水産であり，遊走子の形態と遊走子放出の方法，という重要な点で，本菌と明確に区別される。

○台湾・琉球の植物補遺 (6) (山崎 敬) Takasi YAMAZAKI: Supplement of the flora of Ryukyu and Formosa (6)

13. **台湾のアキノタムラソウ類**　アキノタムラソウ類は *Salvia* の中では特殊な一群で，東アジアのみに分布する。この群は Stibal (Act. Hort. Gotoh, **9**, 1934. **10**, 1935) や村田源氏 (植物分類地理 **14**, 1952) によって明らかにされている。ここで明